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Ralph & Sherry  
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Yo Ralph & Sherry,

Thank you for the Award. It is a joy to undertake this editing project. I think I can put the necessary machine time together between Dutchess Community College and Hillary Harris.

I first met Hillary when I was apprenticing under Stan Vanderbeek in 1965. Stan had a grant from the Rockefeller Foundation and used it to rent Hillary's high-end Oxberry animation stand for a series of illusion-based "films" such as *See Saw Seems The Oxberry* had an automated feature that made the primary visual effect of endless cross dissolves relatively simple, especially when compared with Stan's own animation stand that had a flea market-purchased 35mm DeVry [spelling ?] with 25' loads and no variable shutter. It was like going from a soap box racer to a Cadillac. The experience left me with an impression of Hillary as a man of means. Little has changed that impression. He moved to Woodstock a few years ago and built himself a dream home. It could well have been Vanderbeek's dream too. Constructed of polyurethane over a custom crafted skeleton of laminated wooden arches, the building could be taken for an inverted ship's hull. The complex structure hugs the contours of a steep hill, rising over fifty feet from stem to stern. If you are ever in Woodstock, this is a landmark that merits viewing. Inside the studio section of the structure are a collection of mechanical and electronic gadgets that would interest the Hock shop. Hillary is famous for his motion picture time lapse technology. His famous time lapse sequences are made with motion control cameras. He also engineered some film editing gear using Hall effect magnetic heads. These can read tape position even when the tape is not moving. Very clever. These machines are largely in retirement. Right now Hillary edits with a NewTek Flyer, and this is the toy I hope to use for some of the more demanding sections of my Finishing Fund piece. I have something of a barter going with Hillary. He was over here about six weeks ago using my facility to generate some imagery for a project on visualizing New Age philosophy. A \$500 grant wouldn't begin to cover the real cost of using his gear, but Hillary has my assistance on his latest obsessions. These include a vector to raster converter and some analog 3-D rotational modules.

Hillary was in Owego last week. He would have seen you but heard that Ralph was not feeling well. I hope you are better! Hillary did arrange to have Davy Jones build a vector to raster converter. They are going the frame buffer route. The idea is to covert xy analog waveforms to digital values using ADC's and save them at addresses in the buffer equal to those values. Relative to some of Davy's projects, this is a small buffer. I had another idea which Hillary isn't going to pursue called Content Addressable Memory. In these devices the data is read in at sequential addresses but read out using the data itself as an address. I used this kind of architecture in the the IBM 7350 to develop my version of a particle system. The technique has become very popular for synthesizing fire, smoke, clouds, water and even hair. The architecture is also central in the design of the Aspex PIPE, a cottage industry super computer which I used on a sequence in *Feed the Fire*. Aspex calls the technique Two-Valued Functions. The concept is quite efficient for vector to raster conversion, but there is a penalty. All contiguous lines are converted to discrete points. This means that to make solid vectors, the sampling rate must be increased. The resulting trade-off is with the length of the stored vector. I really should be talking to Davy about this stuff. Give him my greetings.

Part of my association with Hillary stems from SUNY and involves you. In 1977 the University Wide Committee on the Arts met to disburse Rockefeller funds for video projects. Hillary was issued a grant to make a film with a Purchase-based dancer. I had sought the same grant. Ralph might remember all this, because the meeting took place in Binghamton. Hillary took the money and ran. His project was never completed. At the same time, my relationship with SUNY was eroded badly by the Committee decision. I had petitioned Patti Ross with such zeal that she subsequently made a practice of avoiding me. Failing to find support from her, I turned to Hillary himself. He never did use Pantomation, but after I left SUNY for API, he visited in 1980 as part of our artist-in-residence program. That interaction led to a liaison based on mutual interests which continues today.

As for SUNY itself, I find myself at Dutchess Community College quite often. They are well equipped for conventional video production. I rather suspect a better education on this subject can be obtained at D.C.C. than at SUNYA, which was choking on its internal politics the last time I looked. Students take advantage of the D.C.C. resource to such an extent that adjuncts like myself have only occasional access to it, but I think the Finishing Fund project will be given editing time, since it is based on my 1992 class in Advanced Video Production. The Department Head, Eric Somers, has asked for closure so he can exhibit the much anticipated completed work. This will mean that your small grant need not be expended in proportion to my use of their resource.

It is interesting to read Ralph's his ruminations about the emptiness of university life. If the now and the future have lost coherence, as his cited grandmother may have observed, then what about reviewing the past? I always thought that teaching was largely done through a rear-view mirror. The word research literally means "to search again." I describe my own past as one of merely searching. I had hoped that schools like SUNY would use my completed work as a guide for students, so that the paths I blazed would become established by use. It is something like winning a frontier. I regret that you never called

upon me to institute my learning. The only time I participated in a talk at Binghamton was as the invited guest of Jon Rubens who showed his "black movie" for Ken Jacob's students. Five minutes of black. At the end, one of the students stood up and angrily protested that the invisible picture was not centered on the screen. She then stormed out of the theater. This was not the path I was forging. Jon understood this, and later showed me how the "black movie" was really a very detailed study of emulsion grain. It could only be seen by placing one's eye right up to the projector lens as the film passed in front of a 1000 watt bulb. That was pioneering work. Jon had come from the MIT Center for Advanced Visual Studies with his own film processing machine to be the first film teacher at Bard College, but knowing that this beautiful grain dancing like wheat in the wind would not pass muster with the Conceptual crowd, he did not make his images public. Perhaps that sort of political acumen explains how it was that Jon ultimately landed a teaching job at Purchase. His true colors must have been detected, however, because he did not make tenure there. Going back to your grandmothers's observations, Ralph, let me say that the present is the future of the past. The present is the past of the future. Perhaps this perspective is why I anticipate retiring to a regular teaching job much as Emsh did at Cal Arts. I expect that the trails I blazed will ultimately be visited by students of visual art. If the present and future lose interest, the past will sustain me.

Take Pantomation, for example. The process is now being called "motion capture," and state of the art devices with the same objectives as my modified PDP8 are cropping up in production centers. The processes can be realized with more sophisticated machines, but the original Pantograph is worth collecting. Although it lacks its chroma-keyer, the tracking mechanism and the derived analog outputs are intact. Since the program was placed in ferrite core memory, it will not need to be reloaded. The teletype and paper tape drive are lost anyway. I have an extensive library of Pantomation videos showing the beast in action. I am not certain it works, but it did the last time (1987?) I tried it out. If you want to place it in the Hock shop, I would be glad to donate it *gratis*.

The Ampex camera I mentioned (Model BC 300) has a provision to operate a remote VTR. I believe it was used with a conventional quadruplex tied by wire or telemetry, but Ampex did have a 2" helical in the wings. Of course, I do not subscribe to your Ampex salesman's xenophobic petitions to buy American, but this is a cute camera, quite a bit better in every way over contemporary Japanese models. It has high resolution at very low light levels. The plumbicon tube cannot be easily burned like vidicons. The technical documentation is thorough to a fault. The killer, like so many Ampex products, had to be price. I came upon it as surplus from a NYC production house which donated it in 1981 to RPI. One of the engineering students spent a considerable amount of time building a power supply, sync interface and vertical stand. These are the components I had to refurbish. The camera, dated 1969, still works admirably. I am using it for diffraction range finding experiments.

Alas, I could not get my 1969 HP scope to work. It has high voltage problems which are very hard to debug. You cannot put a scope to them and many parts are not available. After losing a few fuses, I put it aside. Now I am limping along on a borrowed BK 15 MHz scope. I remember your large screen O-Scope. You probably could heat your house with it.

On a completely different matter, I think Carl Sagan is more of a threat to himself than to others. We used to parody him mercilessly at RPI. When he got the feedback from us and others, he went on record to declare that he never said "Billions and Billions" in the Cosmos series. Evidently the script was "millions and billions," or something. The disclaimer was funnier than our parody. I cited him in my letter, because he is a well known doom sayer. I doubt he anticipates humans on the planet in 18,000 years. As for myself, if there are humans in 18 millennia, I doubt they will be looking at our videos or mulling over our PDP 8's. We may have generated a legacy, but not with legs like that. Indeed, as GBS anticipated in *Man and Superman*, I rather doubt our descendants will have legs at all.

Phil Edelstein is expecting to visit us this weekend with two kids in tow. If time allows, we'll haul the old Pantograph out of the barn and give it a wring.

Best test cement,

A handwritten signature in dark ink, consisting of the letters '18m' in a stylized, cursive script. The '1' is a simple vertical stroke, the '8' is a looped figure-eight, and the 'm' is a series of connected humps.